

CLAIMS

1. A method for generating agitation noise comprising an arbitrary number
 5 of points, with predetermined histogram, shaped around at least one
 arbitrary frequency characterized in that it comprises:

 - the generation of noise by a succession of several sequences
 $\{h(kN+n)\}_{1 \leq n \leq N}$ of M.N points (M, N integers ≥ 1),
 - [S2]: the choosing for each sequence of M basic subsequence(s)
 10 $\{h_{lm}(n)\}_{1 \leq n \leq N, m \leq M}$ in a random and independent manner from among
 at least L basic subsequence(s) of N points shaped around a
 predetermined frequency (L integer ≥ 1),
 - [S4]: the choosing in a random and independent manner, for each
 15 sequence, of the sign s applied to each of the chosen
 subsequences.

2. The method for generating agitation noise as claimed in the preceding
 claim characterized in that it comprises [S6]: the choosing in a random and
 independent manner, for each sequence, of the direction of temporal
 20 reading R of each of the chosen basic subsequences.

3. The method for generating agitation noise as claimed in any one of the
 preceding claims characterized in that $M = 1$.

- 25 4. The method for generating agitation noise as claimed in the preceding
 claim characterized in that the predetermined shaping frequency of the
 basic subsequences is equal to the arbitrary shaping frequency of the
 noise.

- 30 5. The method for generating agitation noise as claimed in any one of
 claims 1 or 2 characterized in that it comprises [S8]: for each sequence,
 the interleaving E of several subsequences.

6. The method for generating agitation noise as claimed in the preceding
 35 claim characterized in that the interleaved subsequences are either the M

subsequences $\{h_{lm}(n)\}_{1 \leq n \leq N, m \leq M}$ chosen from among L basic subsequences, or the ones part of the M chosen subsequences $\{h_{lm}(n)\}_{1 \leq n \leq N, m \leq M}$ from among L basic subsequences, or several subsequences obtained by interleaving of several basic subsequences
 5 $\{h_l(n)\}_{1 \leq n \leq N}$.

7. The method for generating agitation noise as claimed in one of claims 5 or 6 characterized in that $M = L$.
- 10 8. The method for generating agitation noise as claimed in one of claims 5 to 7 characterized in that the predetermined shaping frequency of the basic subsequences is equal to double at least one of the arbitrary shaping frequencies of the noise.
- 15 9. The method for generating agitation noise as claimed in any one of the preceding claims characterized in that the choosing of a basic subsequence $\{h_l(n)\}_{1 \leq n \leq N}$ leads to the reading of this basic subsequence in storage means.
- 20 10. The method for generating agitation noise as claimed in any one of the preceding claims characterized in that the basic subsequences $\{h_l(n)\}_{1 \leq n \leq N}$ are equiprobable signals shaped around a predetermined frequency.
11. A device for generating an agitation noise comprising an arbitrary
 25 number of points, with predetermined histogram, shaped around at least one arbitrary frequency implementing the method of any one of claims 1 to 10 characterized in that it comprises:
- means of successive provision (7) of several sequences $\{h(kN+n)\}_{1 \leq n \leq N}$ of M.N points (M, N integers ≥ 1),
 - 30 - means of selection (1), for each sequence, of M subsequence(s) $\{h_{lm}(n)\}_{1 \leq n \leq N, m \leq M}$ in a random and independent manner from among at least L basic subsequence(s) of N points shaped around a predetermined frequency (L integer ≥ 1),

- means of selection (4), in a random and independent manner, for each sequence, of the sign applied to each of the chosen subsequences $\{h_{lm}(n)\}_{1 \leq n \leq N, m \leq M}$.
- 5 12. The device for generating agitation noise as claimed in the preceding claim characterized in that it comprises means of selection (5), in a random and independent manner, for each sequence, of the direction of temporal reading of each of the chosen basic subsequences.
- 10 13. The device for generating agitation noise as claimed in any one of claims 11 or 12 characterized in that it comprises means of interleaving (6) of the M chosen subsequences, for each sequence.
- 15 14. The device for generating agitation noise as claimed in any one of claims 11 to 13 characterized in that it comprises means of storage (3) of a basic subsequence and means of reading (2) of the chosen basic subsequence $\{h_{lm}(n)\}_{1 \leq n \leq N, m \leq M}$ in the storage means (3).
- 20 15. A digital analog converter comprising an agitation noise generation device as claimed in any one of claims 11 to 14.
16. A frequency synthesis system comprising an agitation noise generation device as claimed in any one of claims 11 to 14.
- 25 17. A sigma delta modulator comprising an analog digital converter on the direct channel, an agitation noise generation device as claimed in any one of claims 11 to 14, an adder adding the agitation noise generated by the agitation noise generation device to the input of the analog digital converter, and a digital analog converter on the return channel.